

Name _____ Block _____ Date _____

Algebra II Prerequisites Test

Directions: Make sure you show all of your work in the space provided and answer each problem its designated line.

1. Simplify each expression using the rules for order of operations.

a. $2^2(2 + 3) + 5$

b. $30 - 3 \times 2 + 6 \div 3$

c. $2 \times 4 + \frac{14}{5 + 2}$

a. _____

b. _____

c. _____

2. Solve each of the following for the given variable.

a. $3x - 5 = 15$

b. $-6x - 7 = 30 + 3x$

c. $\left(\frac{1}{2}\right)x - 4 = 2$

a. _____

b. _____

c. _____

d. $5(x + 3) = -45$

e. $\frac{x}{5} = \frac{2}{5}$

f. $\frac{7}{x} = \frac{3}{4}$

d. _____

e. _____

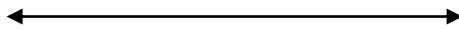
f. _____

3. Write and solve a proportion to answer the following problem.
- A biologist tagged 250 fish. Then she collected another sample of 75 fish, of which 5 were tagged. How many fish would she estimate are in the lake?

3. _____

4. Graph each inequality on the given number line. Be sure to show a scale.

a. $x > 2$



b. $x \geq -4$



5. Solve each of the following inequalities and graph your answer on the given number line.

a. $5x - 7 \geq 2$

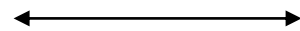
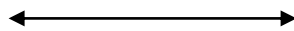
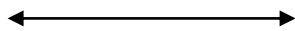
b. $3x - 1 < 5x + 7$

c. $9 < 3 - 2x$

a. _____

b. _____

c. _____



6. Solve each of the following absolute value equations.

a. $|x + 3| = 2$

b. $|2x - 3| = 9$

a. _____

b. _____

7. Solve and graph the absolute value inequality $|x| > 3$.

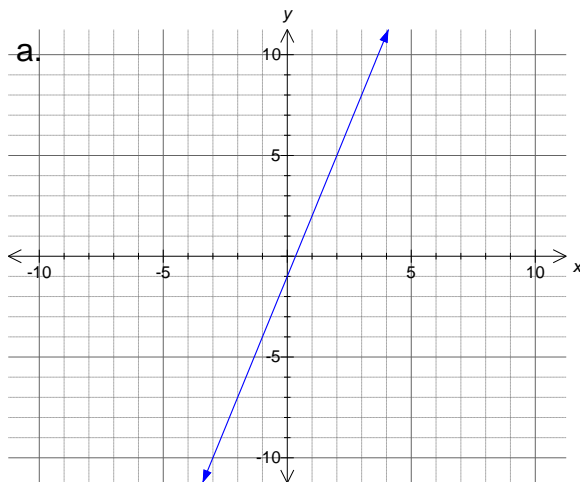
7. _____



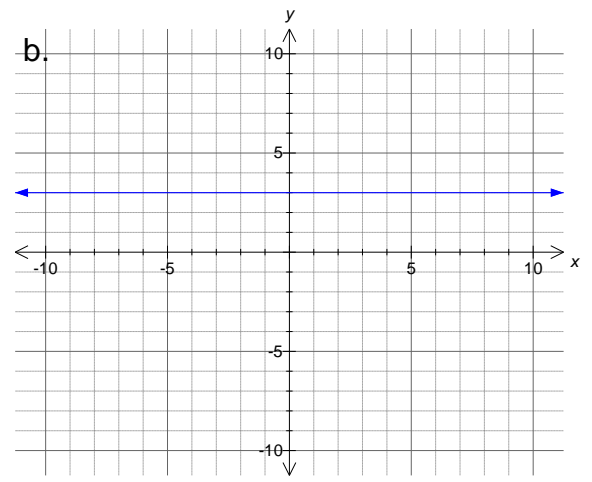
8. Calculate the slope of the line that passes through the points (2, -3) and (-4, 9).

8. _____

9. Calculate the slope of the line graphed on each of the following coordinate planes.



a. _____



b. _____

Extra Credit: